

ABSTRACT OF THE DISCLOSURE

A wireless sensor system for providing irrigation control includes a multiple number of sensor nodes and a multiple number of actuator nodes. Each sensor node includes a wireless transceiver, a processor and a sensor device and provides sensor data. Each actuator node includes a wireless transceiver, a processor and an actuating circuit for driving at least one irrigation valve. In operation, a first sensor node communicates a message to a first actuator node through wireless communication. The message can contain sensor data or control commands. The first actuator node controls the at least one irrigation valve based on the message. Furthermore, the first sensor node can transmit messages to the first actuator node through other sensor or actuator nodes in the system where the other sensor or actuator nodes act as repeater for relaying the messages. The range of the wireless sensor system is thus extended.